EcoShield storage-type gas-fired water heaters

- Hot water recovery rates from 612 to 2436 l/hr at 50°C temperature rise
- Fully modulating pre-mix burner
- Efficiencies of up to 96.45%
- Low NOx emissions ≤40mg/kWh
- 5-year storage vessel warranty
- 10 bar working pressure
- Con-X-us, app-based control ancillary

Lochinvar®
HIGH EFFICIENCY BOILERS & WATER HEATERS
EcoShield water heaters

EcoShield fully condensing gas-fired water heaters are available in 6 models with hot water recovery rates from 612 to 2436 litres/hour based upon a temperature rise of 50°C. These units are designed on the principle of low hot water storage but fast recovery, and are suitable for many commercial and industrial applications.

With efficiencies of up to 96.45% (building regulations gross CV) and NOx emissions as low as 26mg/kWh, EcoShield water heaters can reduce energy consumption and carbon emissions.

Product features
- Fully modulating pre-mix burner with 5:1 turndown
- Stainless steel heat exchanger
- Integral A-rated shunt pump
- Suitable for unvented or open vented hot water systems
- CFC-free foam insulation – which reduces standing losses
- Available for natural gas or LPG

Integral storage
The hot water generated in the heat exchanger is transferred to the integral storage vessel via the A-rated shunt pump and inter-connecting pipework. Storage capacities range from 248 to 424 litres. The storage vessel is constructed from high quality enamelled steel, and includes a cleanout opening.

The storage vessel is supported with a 5-year warranty against leakage.

Ease of maintenance
Access to the heat exchanger, burner and controls is from the front of the unit, and provides for ease of maintenance.

On the water side cathodic protection is provided by 2 horizontally installed magnesium anodes. Again this allows for easy inspection and replacement if necessary. A corrrex non-sacrificial anode protection system is available as an ancillary option.

Stainless steel heat exchanger
At the heart of the EcoShield Water Heater is a grade 316l stainless steel heat exchanger. This material provides superior resistance to corrosion.

The coiled design of the heat exchanger allows for condensation to occur, creating high efficiency, particularly on initial heat up.

Advanced electronic control
The integral control is easy to navigate and provides information on water heater status, as well as providing detailed diagnostic information.

Also included are:
- Contacts for connection to BMS
- Programmer/setback facility
- Adjustable pump delay

Actual temperature
Heat demand indicated
Burner firing rate
Temperature set point
Display shows DHW data
Integral pump activated
Siting flexibility

The EcoShield requires minimal clearances shown below, and as a result can be installed in compact spaces.
- Top: 450mm
- Left: 600mm
- Right: 100mm
- Front: 600mm
- Rear: zero

Flue options

EcoShield water heaters can be installed with horizontal or vertical concentric flue, twin pipe (parallel) balanced flue or conventional flue.

Horizontal and vertical concentric flue

<table>
<thead>
<tr>
<th>Water heater model</th>
<th>Height (Mm)</th>
<th>Diameter (Mm)</th>
<th>T&amp;P valve (Mm)</th>
<th>Condense trap (Mm)</th>
<th>Cold feed (mm)</th>
<th>Hot outlet (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHW35-245CE</td>
<td>1568</td>
<td>714</td>
<td>755</td>
<td>1144</td>
<td>1610</td>
<td>1610</td>
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<tr>
<td>SHW46-325CE</td>
<td>1924</td>
<td>714</td>
<td>1117</td>
<td>1503</td>
<td>2005</td>
<td>2005</td>
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<tr>
<td>SHW61-325CE</td>
<td>1927</td>
<td>714</td>
<td>1126</td>
<td>1517</td>
<td>2005</td>
<td>2005</td>
</tr>
<tr>
<td>SHW86-410CE</td>
<td>1922</td>
<td>860</td>
<td>786</td>
<td>1248</td>
<td>2020</td>
<td>2020</td>
</tr>
<tr>
<td>SHW116-410CE</td>
<td>1922</td>
<td>860</td>
<td>786</td>
<td>1248</td>
<td>2020</td>
<td>2020</td>
</tr>
<tr>
<td>SHW146-410CE</td>
<td>1922</td>
<td>860</td>
<td>786</td>
<td>1248</td>
<td>2020</td>
<td>2020</td>
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</tbody>
</table>

Twin pipe flue

<table>
<thead>
<tr>
<th>Water heater model</th>
<th>Diameter (mm)</th>
<th>Max. total length (m)</th>
<th>Reduction for 90° bend (m)</th>
<th>Reduction for 45° bend (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHW35-245CE</td>
<td>80/125</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
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<tr>
<td>SHW46-325CE</td>
<td>80/125</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>SHW61-325CE</td>
<td>80/125</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>SHW86-410CE</td>
<td>100/150</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>SHW116-410CE</td>
<td>100/150</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>SHW146-410CE</td>
<td>100/150</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Conventional flue

<table>
<thead>
<tr>
<th>Water heater model</th>
<th>Diameter (mm)</th>
<th>Max. total length (m)</th>
<th>Reduction for 90° bend (m)</th>
<th>Reduction for 45° bend (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHW35-245CE</td>
<td>80</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>SHW46-325CE</td>
<td>80</td>
<td>60</td>
<td>1</td>
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<tr>
<td>SHW61-325CE</td>
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<td>60</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>SHW86-410CE</td>
<td>100</td>
<td>60</td>
<td>1</td>
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<tr>
<td>SHW116-410CE</td>
<td>100</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>SHW146-410CE</td>
<td>100</td>
<td>60</td>
<td>1</td>
<td>0.5</td>
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</table>
Technical specification

<table>
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<tr>
<th>Water heater model</th>
<th>SHW35-245CE</th>
<th>SHW46-325CE</th>
<th>SHW61-325CE</th>
<th>SHW86-410CE</th>
<th>SHW116-410CE</th>
<th>SHW146-410CE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal input (nett) kW</td>
<td>33.3</td>
<td>39.6</td>
<td>55.4</td>
<td>75.2</td>
<td>105.3</td>
<td>132.0</td>
</tr>
<tr>
<td>Nominal input (gross) kW</td>
<td>36.6</td>
<td>44.0</td>
<td>61.5</td>
<td>83.5</td>
<td>116.9</td>
<td>146.5</td>
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<tr>
<td>Gas flow rate (natural gas) m³/hr</td>
<td>3.50</td>
<td>4.20</td>
<td>5.70</td>
<td>8.00</td>
<td>11.10</td>
<td>14.00</td>
</tr>
<tr>
<td>Nominal output kW</td>
<td>35.2</td>
<td>41.2</td>
<td>58.7</td>
<td>79.7</td>
<td>110.6</td>
<td>141.2</td>
</tr>
</tbody>
</table>

**Efficiency Data - Building Regulations**

- Seasonal efficiency (gross CV) % 96.2 93.6 95.8 96.0 94.6 96.4
- Maintenance consumption value MJ/M 302 302 302 302 302 302

**Efficiency data - ErP and energy label**

- Ecodesign energy label rating B B B n/a n/a n/a
- Water heater efficiency % 76 73 81 79 78 79
- NOx Emmissions
  - NOx @0%O2 according to EU regulation 812/2013 mg/kWh 26 33 27 33 40 38

**General data**

- Recovery rate @ 44°C l/hr 695 806 1153 1567 2164 2768
- Recovery rate @ 50°C l/hr 612 709 1014 1379 1904 2436
- Recovery rate @ 56°C l/hr 546 633 905 1231 1700 2175
- Dimensions (height) mm 1530 1920 1920 1920 1920 1920
- Dimensions (diameter) mm 715 715 715 865 865 930
- Storage capacity litres 248 331 332 420 423 424
- Weight (empty) kg 136 281 290 379 388 406
- Weight (full) kg 384 614 625 825 838 860
- Hot outlet connection (inches) BSP 1½" 1½" 1½" 2" 2" 2"
- Cold feed connection (inches) BSP 1½" 1½" 1½" 2" 2" 2"
- Gas connection (inches) BSP ½" ½" ½" ¾" 1" 1"
- Flue connection (concentric) mm 80/125 80/125 80/125 100/150 100/150 100/150
- Flue connection (twin-pipe) mm 80 80 80 100 100 100
- Electrical requirements V 230V/1Ph/50Hz
- Power consumption (peak) W 361 431 459 646 932 961
- Sound power level LWA(dB) 56 58 60 62 64 66
- Maximum flue gas temperature °C 120 120 120 120 120 120
- Max outlet temperature °C 80 80 80 80 80 80
- Maximum working pressure bar 10 10 10 10 10 10

Energy label, product fiche and ErP data table are available at www.lochinvar.ltd.uk

**Ancillary options**

- Unvented system kits
- Concentric and twin pipe flue assemblies
- Conventional flue adaptor
- Correx non-sacrificial anode system (factory fitted)
- Condensate neutralisation kit
- Con-X-us app-based control

For further information on the EcoShield™ water heater, including ICM & user instructions and our full warranty terms and conditions, please visit our website: www.lochinvar.ltd.uk